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Attachment 4

California Regional Water Quality Control Board

North Coast Region

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To: Holly Lundborg
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From: Adona White
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Date: December 19, 2003

Subject: OVERVIEW OF FIELD VISIT TO ELK RIVER AND FRESHWATER CREEK
WITH THE ARMY CORPS OF ENGINEERS TO INFORM POTENTIAL
CHANNEL MODIFICATION PROJECTS

Friday December 12, 2003 staff of the North Coast Regional Water Quality Control Board (Regional Water Board) and the US Army Corps of Engineers (Army Corps) visited Elk River and Freshwater Creek watersheds. The purpose of the trip was to provide an overview of the watersheds, sedimentation-related impacts, and current channel conditions to inform potential channel modification projects aimed at reducing flooding conditions. Present on the field visit were myself, Kelley Reid and Mike Dillabough (both of the Army Corps), and Kristi Wrigley (Elk River resident) joined us at her properties. The weather was rainy.

We viewed the Highway 101 crossing near the mouth of Elk River from the Park and Ride and the west side of 101. Discussion points included the potential effects tides on the lower watershed during high flows, the potential for the 101 and railroad bridges to act as flow obstructions, the migrating sand spit, and Martin Slough entering Elk River.

We stopped at Zanes Road covered bridge and observed the riparian conditions, cattle-related bank erosion, and sediment deposition. We made general observations of the patterns and grain size of sediment; as fine silt and clay is deposited on the banks, bank slumps appear to cause willow and alder riparian vegetation to tilt and fall in toward the channel. I pointed out that the bridge may act as a possible flow obstruction.

At the Berta Road covered bridge we observed the eastern approach of Berta Road which floods and limits residents from coming and going. Additional bank slumps were observed here. We discussed resident John Estevo's reports to me of historically pumping river water to his dairy since ~1950 and that pools are no longer present. We discussed the sediment deposition

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resulting in the burial of fence posts, such that many fences no longer function for livestock inclusion/exclusion. Again, I pointed out that the bridge may act as a possible obstruction.

We visited the Wrigley Red House at the confluence of North and South Fork Elk River. Resident Kristi Wrigley briefly discussed her family's presence in the Elk River valley and her observations of changes in channel conditions and flood patterns. Her aunt and her husband both grew up in the valley and built the Red House in the 1950s after observing flood patterns, indicating they would not have built the house in an area that flooded regularly. She said there used to be a 10-12 foot hole at the confluence. South Fork used to cascade into the pool as it entered at a higher gradient than North Fork. The sediment deposition has changed the channel geometry and where banks used to be nearly vertical, sediment deposits at an angle of repose of ~45 degrees. Bank slumps are evident. In December 2002, 23 inches of water entered the red house, higher than ever before, according to Kristi.

The Concrete Bridge crosses North Fork Elk River and provides access to residences of both North Fork and South Forks. We observed areas of inundation and the high water mark of December 2003. Kristi Wrigley pointed out the bridge pier near the right bank that had sediment filled behind it and said she used to run around it. Salmon Forever, a volunteer monitoring organization, makes streamflow measurements at this bridge and a good stage-discharge relationship exists.

Our last stop in Elk River was Kristi Wrigley's Apple Orchard, located on the North Fork Elk River immediately downstream of Pacific Lumber Company property. Kristi pointed out the narrow valley width at this location, the sediment deposition at several locations and discussed the timing. She pointed to locations of fences that her family placed based upon "mean high water" that now flood several times each year. She pointed out an alder tree that her son, now in his mid 20's, chinned himself on as a teenager; that tree is now severely buried in fine sediment. She discussed her observations of changes in channel geometry, the banks used to be steep with a primary channel, and a high water channel, and an upper terrace. Her observations indicate the high water channel had filled in with sediment, causing the high water to inundate the upper terrace, where the apple orchard is. She pointed out where pools used to exist, where bank erosion is occurring, where fence posts had been buried, and apple trees had been buried. She discussed the detrimental impacts of the sedimentation and associated floods on her apple business. The sediment being deposited on the apples is clay and does not allow aeration of the roots, the water table is now high and the tree roots are now in water more of the time, the trees are stressed and are covered in phytophthora and lichens. The trees should have produced 2000 boxes of apples and this year produced 500 boxes. The floods and sediment deposition keep damaging fences and now bears can easily access her trees and eat lots of apples.

We then visited Freshwater Creek, though did not spend so much time there. We stopped at the Devoy Road bridge over Freshwater Slough. Residents have reported increased flooding here. We discussed wetland restoration projects by the nearby Freshwater Farms, who have partnered with agencies.

We visited the Myrtle Road Bridge over Freshwater Creek at 3-Corners Market. The Harbor District indicated their jurisdiction extends to here. We observed the substrate is sandier here than in Elk River and that willows are present within the riparian area.

We stopped at the Howard Heights Road Bridge. I pointed out that this is an area which floods regularly, limiting residents from coming and going. The Humboldt Fish Action Council works downstream of the bridge. I pointed out the field on the left bank and that I observed sediment deposition throughout the field following the December 2002 high flows. I described my observation of the sediment in the reach downstream of the bridge as being predominantly sand and gravel. I described my observation of the riparian vegetation as being willow and alders, though not as encroached into the stream as in Elk River. There are good data indicating fish utilization in Freshwater Creek.

We observed the mouth of Graham Gulch and Freshwater Creek. I pointed out the residence of Dr. Terry Roeloffs and that he is planning to move his house to avoid being flooded, since he has observed significant aggradation at his property. Salmon Forever has been continuously monitoring streamflow, turbidity, and suspended sediment at his property since 1999. We observed the substrate as being sandy and gravelly.